

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-41 (canceled)

Claim 42 (Previously Presented): A method of inserting an inaudible code into an audio signal comprising:

sampling the audio signal to generate a plurality of sub blocks of sampled audio, each of the sub blocks having a duration less than a minimum audibly perceivable signal delay;

combining the sub blocks into a plurality of partially overlapping short blocks which together comprise a long block;

individually transforming each of the short blocks into a frequency domain;

encoding each transformed short block in the frequency domain with a desired code by:

selecting at least one frequency to encode based on the desired code to insert and a predetermined coding rule;

setting an amplitude of the at least one frequency based on a masking energy associated with the at least one frequency;

setting a phase angle of the at least one frequency; and

transforming the encoded short block into the time domain; and

constructing an encoded time domain signal from at least two sequential ones of the encoded time domain short blocks, the phase angles of the encoded short blocks are set by setting the phase angle of the at least one frequency of a first short block to a first predetermined value, and incrementing the phase angle of each subsequent short block by a predetermined amount.

Claim 43 (Previously Presented): A method as defined in claim 42, wherein selecting at least one frequency to encode comprises selecting at least one frequency to encode in each of a plurality of frequency bands, wherein setting the amplitude of the at least one frequency comprises setting the amplitude of the at least one frequency in each of the plurality of frequency bands, and wherein setting the phase angle of the at least one frequency comprises setting the phase angle of the at least one frequency in each of the plurality of frequency bands.

Claim 44 (Previously Presented): A method as defined in claim 43, wherein the plurality of frequency bands comprises at least five frequency bands.

Claim 45 (Previously Presented): A method as defined in claim 42 further comprising decoding the long block.

Claim 46 (Previously Presented): A method as defined in claim 45, wherein decoding the long block comprises:

transforming the long block as a whole into the frequency domain; and
identifying a code in the long block as the desired code if the code is carried by a majority of the frequency bands.

Claim 47 (Previously Presented): A method as defined in claim 46, wherein the code is carried by a majority of the frequency bands if a frequency identified in the predetermined coding rule is a relative maximum in a majority of the frequency bands.

Claim 48 (Previously Presented): A method as defined in claim 42, wherein the first predetermined value comprises zero degrees.

Claim 49 (Currently Amended): An apparatus for inserting an inaudible code into an audio signal comprising:

a sampler configured to sample the audio signal to generate a plurality of sub blocks of sampled audio, each of the sub blocks having a duration less than a minimum audibly perceivable signal delay;

a combiner configured to combine the sub blocks into a plurality of partially overlapping short blocks which together comprise a long block;

a transformer configured to individually transform each of the short blocks into a frequency domain;

an encoder configured to encode each transformed short block in the frequency domain with a desired code by:

selecting at least one frequency to encode based on the desired code to insert and a predetermined coding rule;

setting an amplitude of the at least one frequency based on a masking energy associated with the at least one frequency;

setting a phase angle of the at least one frequency; and

transforming the encoded short block into the time domain,

wherein the encoder is configured to construct an encoded time domain signal from at least two sequential ones of the encoded time domain short blocks, the phase angles of the encoded short blocks are set by setting the phase angle of the at least one frequency of a first short block to a first predetermined value, and incrementing the phase angle of each subsequent short block by a predetermined amount.

Claim 50 (Previously Presented): An apparatus as defined in claim 49, wherein the encoder is configured to select at least one frequency to encode in each of a plurality of frequency bands, to set the amplitude of the at least one frequency in each of the plurality of frequency bands, and to set the phase angle of the at least one frequency in each of the plurality of frequency bands.

Claim 51 (Previously Presented): An apparatus as defined in claim 50, wherein the plurality of frequency bands comprises at least five frequency bands.

Claim 52 (Previously Presented): An apparatus as defined in claim 49 further comprising a decoder configured to decode the long block.

Claim 53 (Previously Presented): An apparatus as defined in claim 52, wherein the decoder comprises:

a transformer configured to transform the long block as a whole into the frequency domain; and

an identifier configured to identify a code in the long block as the desired code if the code is carried by a majority of the frequency bands.

Claim 54 (Previously Presented): An apparatus as defined in claim 53, wherein the code is carried by a majority of the frequency bands if a frequency identified in the predetermined coding rule is a relative maximum in a majority of the frequency bands.

Claim 55 (Previously Presented): An apparatus as defined in claim 49, wherein the first predetermined value comprises zero degrees.

Claims 56-63 (canceled)